

Hart Restoration, Inc.

Hartland Nursery

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To: U. S. Army Corps of Engineers, Sacramento District
Colonel Ronald N. Light, Sacramento District
1325 J. Street
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Regarding: U. S. Army Corps of Engineers Levee Vegetation Management Guidelines

Date: June 19, 2007

It has recently been reported that the U.S. Army Corps of Engineers is proposing to enforce a policy that would strip woody vegetation off levees under their jurisdiction. While vegetation needs to be better managed, this policy would undermine levee stability, and increase the risk of flooding of important farmland, infrastructure and the human communities that live behind these levees. If implemented, the policy would destroy important habitat for many species of wildlife, including some already threatened. It would decimate the beauty of an important cultural landscape enjoyed by many people. Moreover, the assumptions underlying this policy contradict an overwhelming body of scientific literature that documents the stabilizing influence of vegetation in these kinds of environments.

Appropriately selected plants improve levee stability and increase resistance to scour erosion in several important ways. Plant roots reinforce and bind soil particles together. Leaves and stems 1) slow water velocity near the ground surface, 2) deflect erosive water currents away from the bank, and 3) adsorb wave energy. Vegetation recruits protective sediment, transfers moisture from the root zone to the atmosphere, and discourages burrowing activity by animals such as ground squirrels. The use of plants for improving levee integrity does not preclude the use of other standard engineering approaches, such as rock riprap, articulated concrete blocks, and groins. In fact, vegetation can be purposely planted in rock riprap to improve lift off resistance and interlocking between armor units.

Vegetation can be managed to improve levee stability and facilitate viewing/inspection by such methods as periodic coppicing (pruning), grazing, selective spraying and mowing. Many levee locations in our region that have allowed vegetation growth have been stable for dec-



ades. Conversely, practices that encourage excessive plant removal harm levees through increased erosion, presence of burrowing rodents, increased maintenance costs and ultimately expensive repair work. Ironically, the current habitat improvements associated with the emergency levee work in our region is sometimes occurring at the very sites where plant cover was removed and then followed by severe erosion! In both New Orleans and Jones Tract, levee failure was not associated with the presence of vegetation. In fact, the presence of wetlands and plants would have provided protection in these situations.

A common ground for levee protection is found at the junction of classic engineering approaches, appropriate vegetation management, and concerns for environmental enhancement.

I would suggest that a boat trip be organized in the Delta to explore these issues. To that end I would offer my tour boat, Tule Queen II, as a vehicle for these discussions. I look forward to hearing from you.

Sincerely,



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